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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,666	05/03/2005	Stefan Wolz	016915-0279	6231
22428 7590 10/01/2008 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
TAL XIYU				
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10/01/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/533,666

**Applicant(s)**

WOLZ, STEFAN

**Examiner**

Xiuyu Tai

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 May 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 03 May 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-850)  
Paper No(s)/Mail Date 5/3/2005  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Inventor's Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: the arrangement of specification does not meet the layout requirement.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 1 recites the limitation "the framework" in line 4. There is insufficient antecedent basis for this limitation in the claim. Claims 2-12 are rejected because of their dependency and failure to remove the ambiguity of parent claim. Appropriate correction is required.
5. Claim 2 recites the limitation "the framework material" in line 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.
6. Claim 3 recites the limitation "the veneering material" in line 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Gal-or et al (WO9950480).

9. Regarding claim 1, Gal-Or et al disclose a method of electrophoretic deposition of ceramic bodies for use in manufacturing dental appliances. Gal-Or teaches a method of making ceramic dental appliances by electrophoretically depositing ceramic on a dental die (Example 3; page 7-8 of description). The dental die made of gypsum coated with a silver paint serves as a cathode in the EPD cell containing ceramic suspension (Example 3; page 8 of description). It should be noted that gypsum of the dental die and silver paint have different conductivity and are arranged in different regions. The reference teaches every step as cited in the instant claim.
10. Regarding claim 2, ceramic is deposited on the dental die by electrophoretic deposition in the first suspension containing alumina particles (Example 3; page 7-8 of description), reads on the instant claim.
11. Regarding claim 3, the core (i.e. ceramic body) is coated with a glass coating by electrophoretic deposition in the second suspension containing glass particles (Example 3; page 7-8 of description), reads on the instant claim.
12. Regarding claim 6, the first suspension comprises alumina (Example 3; page 7 of description), reads on the instant claim.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gal-or et al (WO9950480) as applied to claim1 above, and further in view of Hennicke et al (U.S. 4,246,086).

16. Regarding claim 4, Gal-Or further teaches that a surface coating of a porous material such as porous tissue or paper on the cathode can effectively absorb hydrogen (fourth paragraph on page 5 of description), but fail to teach to activate the cathode (i.e. dental die coated with silver paint and porous material) in a salt solution. However, Hennicke et al disclose a method for coating dental crown and bridges. Hennicke teaches to activate the base blank workpiece 10 by submerging in a salt solution consisting of HCl and CuSO<sub>4</sub> (col. 3, line 7-10) prior to electrophoretic deposition in an electrophoretic container 14 in a water-based ceramic suspension (col. 3, line 21-23 & 31-35). Therefore, it would be obvious for one having ordinary skill in the art to activate dental die having silver paint as a cathode and a porous paper of Gal-Or in a salt solution as suggested by Hennicke in order to achieve eletrophoretic deposition of ceramic on the dental die in a water-based suspension.

17. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gal-or et al (WO9950480) as applied to claim 1 above, and further in view of Gruber (U.S. 3,454,429).

18. Regarding claims 5 and 9, Gal-Or suggests a consumable cathode for manufacturing dental appliances in order to spare the step of removing the green body from the cathode (the last second paragraph on page 4 of description), but fail to teach the consumable cathode comprising aluminum foil arranged between two fibrous layers. However, Gruber disclose a method of generating electricity in tape type fuel cell. Gruber teaches a tape type consumable electrode (col. 6, line 3-14) which comprises nylon as base material (col. 11, line 1-8) and aluminum foil laminated on the base (col. 11, line 63-67). Therefore, it would be obvious for one having ordinary skill in the art to utilize the consumable electrode comprising aluminum foil as suggested by Gruber in the method of Gal-Or in order to avoid removing the green body from the cathode that is made by less expensive material, hence reducing the cost of manufacturing dental appliances

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gal-or et al (WO9950480) and Hennicke et al (U.S. 4,246,086) as applied to claim 4 above, and further in view of Gruber (U.S. 3,454,429).

20. Regarding claim 7, Gal-Or/Hennicke teach a porous material such as paper on the cathode (i.e. the dental die coated with silver paint), but fail to teach using nylon. However, Gruber disclose a method of generating electricity in tape type fuel cell. Gruber teaches a tape type consumable electrode (col. 6, line 3-14) which comprises

nylon as base material (col. 11, line 1-8). Gruber further states that nylon is resistant to attack by chemical in suspension (col. 11, line 15-16). Therefore, it would be obvious for one having ordinary skill in the art to utilize nylon as suggested by Gruber in lieu of paper of Gal-Or/Hennicke in order to protect cathode from attacking by chemical in the suspension.

21. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gal-or et al (WO9950480) as applied to claim 1 above, and further in view of Juergen (DE10049971).

22. Regarding claim 8, Gal-Or does not teach the dental die comprising alumina fiber. However, Juergen disclose a method of making ceramic dental article by electrophoretic deposition. Juergen teaches that introduction of ceramic fibers and /or whisker into the structure of the dental molding can improve the mechanical properties of the ceramic material (the last second paragraph on page 1 of description). Therefore, it would be obvious for one having ordinary skill in the art to include alumina fiber and/or whiskers in order to improve mechanical strength of the dental appliances of Gal-Or.

23. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gal-or et al (WO9950480) as applied to claim 1 above, and further in view of Hennicke et al (U.S. 4,246,086) and Hamlen et al (U.S. 4,626,482).

24. Regarding claim 10, Gal-Or fails to teach to activate the cathode (i.e. dental die coated with silver paint and porous material) in a saline solution. However, Hennicke et al disclose a method for coating dental crown and bridges. Hennicke teaches to activate the base blank workpiece 10 by submerging in a salt solution consisting of HCl and



CuSO<sub>4</sub> (col. 3, line 7-10) prior to electrophoretic deposition in an electrophoretic container 14 in a water-based ceramic suspension (col. 3, line 21-23 & 31-35).

Therefore, it would be obvious for one having ordinary skill in the art to activate dental die having silver paint as a cathode and a porous paper of Gal-Or in a salt solution as suggested by Hennie in order to achieve electrophoretic deposition of ceramic on the dental die in a water-based suspension.

Gal-Or/Hennie fails to teach activate the cathode in saline solution. However, Hamlen et al disclose a metal/air battery. The battery is activated by filling the single reservoir with a saline solution (col. 3, line 40-43). Therefore, it would be obvious for one having ordinary skill in the art to activate the dental die with a saline solution as suggested by Hamlen in lieu of the salt solution of Gal-Or/Hennie in order to utilize simple and less expensive components to activate the dental die.

25. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gal-or et al (WO9950480) as applied to claim 1 above.

26. Regarding claims 11 and 12, Gal-Or does not specifically disclose the pattern of the silver paint on the dental die. However, Gal-Or indicates that the cathode can be a wire having a shape identical to the desired interior shape of the ceramic article. Therefore, one having ordinary skill in the art would have realized to create different patterns of the cathode according to the shape of the dental appliances in order to accommodate the intended use.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuyu Tai whose telephone number is 571-270-1855. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X. T./  
Examiner, Art Unit 1795

9/16/2008

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795